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1.6 Research Report

Background

The ability to construct an argument is central to the secondary school study of history, as in other subjects. Traditionally this skill has been developed through classroom discussion and individually-authored essays. The developing use of asynchronous electronic conferences for secondary pupils, either individually or in groups, has provided a new site for the development of argumentation skills. However, to date there has been little research in this area and the practitioner-oriented published reports that do exist have been based on anecdotal evidence rather than systematic data analysis. These studies have, however, provided interesting observations.

Wilson and Scott's (2003) anecdotal report on email exchange between Year 9 classes in two different schools claimed that whole-class collaborative composition of messages was motivating: pupils engaged because of the competitive element. Similarly, Thompson and Cole (2003) claimed that using a message board had positive effects on small groups of history sixth-formers collaboratively composing messages. They concluded that, based upon history-assessment criteria, the quality of students' argument improved, and that message boards had contributed to this alongside other teaching strategies. Their observations pointed to the following benefits: students selected evidence to support their contentions more carefully in e-conferences than in face-to-face discussion; more reticent students became involved; the message board afforded time to think before replying, and opportunities for teacher intervention. The problem they noted was how to achieve a balance between freedom of discussion (with students initiating debate) and teacher control.

More recently, Moorhouse (2006) published an anecdotal account of work associated with the UK Historical Association's (HA) Centenary Debates. Here individual students discussed an issue in an online forum before collaboratively agreeing the contribution they would post as a class to the HA online schools debate. He reported that students were enthusiastic but that their desire to 'win the debate' may have clouded their judgement, perhaps because it pitched school against school.

There has been some limited work in other school subjects. A Geographical Association study (<http://www.geography.org.uk/projects/whyargue>) was frustrated by problems of access to reliable software, reflecting the relatively undeveloped nature of e-conferencing in most schools. Other studies, rather than focusing specifically on e-conferencing, have considered the impact of ICT in general on classroom practice (eg. Masterman and Sharples, 2002; Moseley and Higgins, 1999; Pedretti et al., 1998; Torgerson and Zhu, 2003). Koschmann (1996) suggested that while early research into the educational use of computers took a behaviourist or cognitive approach, later studies adopted a socially-oriented approach to computer-supported collaborative learning, and this trend now includes talk around computers (Wegerif, 2004; Wegerif and Dawes, 2004).

Other research has focused on tertiary rather than secondary education (see Coffin and Hewings, 2005; De Laat and Lally, 2004; Dysthe, 2002; Howe and Tolmie, 1999; Marttunen and Laurinen, 2001; McAlister et al., 2004; Pilkington and Walker, 2003;

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Schellens and Valcke, 2004), but nevertheless has provided findings relevant to our school context. For example, Hawkey (2003) observed that trainee history teachers used e-conferencing not to argue but to advance pre-prepared positions. Kirkpatrick (2005) noted the problem of integrating discussion into an existing curriculum. While Rogers (2004) commented on lecturers' adverse perception that too much e-conference discussion was social, Beuchot and Bullen's (2005) study claims that interpersonally-oriented exchanges lead to increased participation and expand the depth of discussion, thus facilitating online collective knowledge building.

Of particular relevance to our project are studies focusing on collaborative argumentation (Andriessen et al., 2003; Arnseth, 2004; Kanselaar et al., 2002; McAlister et al., 2004). Researchers within this tradition hold the theoretical position that argumentation is a process that facilitates reflection and knowledge restructuring (Andriessen et al., 2003: 11). They argue that text-based and time-delayed communication supports the argumentation process by allowing learners to track complex questions or problems under discussion. Andriessen (2006: 198) describes it as a 'slow discussion', offering students considerable time for reflection and pondering (unlike face-to-face discussion). A number of studies have also asserted that counter-argumentation plays a particularly important role in facilitating meta-cognitive activity by prompting learners to rethink their initial argument and in so doing 'update' their knowledge (Leitão, 2000). Broader research into argumentation has also informed our study, raising analytical issues that we will return to in section 3. Andrews and Mitchell (2001), Coffin (2006a), Driver et al. (2000), Erduran, Simon and Osborne (2004), Fulkerson (1996a; 1996b), Mitchell and Andrews (2000), and Mitchell and Riddle (2000), offer useful insights into the structure and process of argumentation in face-to-face discussion and/or written essays across a wide range of subject/disciplinary areas. In this study, however, we focus on text-based e-conferencing (compared with essays) and, in particular, we explore argumentation from a linguistic perspective.

This focus is based on the premise that language is at the heart of the learning process – a premise supported by work in sociocultural psychology (Mercer, 2001), systemic functional linguistics (Christie and Martin, 2007; Halliday and Martin, 1993) and education (Wells, 1994, 1999). Subject knowledge is, in part, discursively and collaboratively constructed and argumentative discourse is pivotal in understanding the evaluative criteria used in knowledge building. As history has moved from a pedagogy of knowledge transfer to one where students are taught to think and work as historians, there has been growing interest in how students develop their historical knowledge and understanding (e.g. Lee, 2004; Lee and Ashby) and how this process relates to the expansion of students' linguistic repertoires (Coffin, 2006b; North, 2005). Our study aims to contribute to an area of growing significance in educational and linguistic research which has the potential to transform pedagogic practices. The originality of our study lies in the development of an analytical framework underpinned by functional linguistic theory which provides unique insights into how students use language to argue, insights that can inform teaching and learning both in history and more generally.

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Objectives

Overall objectives were to:

- 1) contribute to the development of methodologies for the linguistic analysis of argumentation in e-conferencing and essay-writing;
- 2) advance understanding of the language and discourse of argumentation in e-conferences and essays in secondary school history;
- 3) develop guidelines as to good practice and effective strategies for supporting argumentation in e-conferences
- 4) inform national and local policy on the use of e-conferencing in secondary school classrooms.

To achieve these objectives we investigated the following research questions.

- 5) What methodological innovations are necessary to best capture processes of argumentation within e-conferencing?
- 6) What are the main differences between the use of language and processes of argumentation in traditional single-authored essays and e-conferences?
- 7) How can teachers be supported in relating the development of argumentation skills in e-conferencing to their development in essay-writing?

Our findings are reported in full in later sections. In brief, we developed a robust analytical framework (objective 1 – see section 3) which enabled us to establish the kinds of argumentation and language use that e-conferencing generates amongst secondary pupils and how these differ from argumentation and language use in essays (objective 2 – see section 4). We also considered issues of quality and what role language plays in the effectiveness of argumentation in both environments. On this basis we were able to develop a set of guidelines which we have disseminated by means of our website and a series of on- and offline professional development seminars and activities (objective 3 - see sections 5-7). Our findings have also begun to feed into national and local policy through our dissemination work with local authorities and influential bodies such as the British Educational Communications and Technology Agency (BECTA), a particularly important organisation in that it provides policy makers and advisors within government and partner agencies with key findings from ICT educational research (objective 4).

Methodology

Introduction

Educational e-conferencing has generally been analysed from a psychology rather than linguistic perspective, using quantitative content analysis to investigate knowledge construction, collaborative learning or critical thinking (De Laat and Lally, 2004; Gunawardena et al., 1997; Hara et al., 2000; Perkins and Murphy, 2006; Weinberger and Fischer, 2006). Although some studies have incorporated discourse analysis (e.g. Schrire, 2006), few have approached e-conferencing from an applied linguistics perspective. One main outcome of our research has been the development of a functional linguistic method of analysing this particular type of discourse.

We set up five e-conferences over a three-week period, in which groups of approximately eight Year 9 pupils from two different classes in two schools discussed the question: “The most important reason why the Nazis came to power in 1933 was that they had Hitler as a leader. Do you agree?”. We collected all the e-conference data, together with the history essays students wrote on this topic after the e-conference and for comparison, a set of essays written just before the e-conference (see Appendix 3). We also interviewed teachers, IT network managers and students to gain a better understanding of how they used e-conferencing and regarded its educational value. This additional data enabled us to provide some measure of triangulation by combining qualitative with quantitative data.

Analysis of e-conference and essay data

The aim of the first stage of analysis was to identify what functional moves (e.g. *claim*, *agreement*, *description*, *salutation*) were used in the two contexts. For this purpose, the textual data was segmented into t-units and entered into Excel spreadsheets. The t-unit is a grammatically-defined unit consisting of an independent clause together with any dependent clauses, and was used because it can be identified reliably without overlapping boundaries, thus avoiding the types of segmentation problem identified by Strijbos et al. (2006). Each t-unit was coded according to the functional move it realised; where a move comprised more than one t-unit, coding was continued over all the relevant units. Data from the first two e-conference groups was analysed, and the coding categories were gradually agreed on through discussion of the data. All the textual data was then coded by a single researcher, to maximise consistency. To enhance the quantitative data derivable from the spreadsheets, information was also transferred to summary charts providing a diagrammatic display of the argumentation across time. As the extract in Appendix 8 illustrates, these charts enable us to see not only how many moves of each type occurred overall in a particular e-conference, but also how they were distributed across the participants and across the claims. They thus provide a useful way to represent the overall pattern of the argumentation, and also suggest aspects that merit further qualitative analysis.

Preliminary investigations of the e-conference data suggested that it would be best regarded as a form of informal ‘chat’ with interactional aspects prominent, rather than as a structured piece of writing. Our earlier work had focussed on the relationships between ideational meanings in a text, but this approach now had to be expanded to account also for the way that participants respond to one another. This distinction is particularly important in dealing with argumentation, where we are interested not only in the

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negotiation of interpersonal relationships and rhetorical alignment but also the co-construction of new knowledge and positions.

Andrews suggests that approaches to argument range along a spectrum from logic at one end to rhetoric at the other; at the rhetorical end the focus is on the way views are exchanged, in 'the choreography of argument' (Andrews, 2005: 110). As Leitão comments, a dialogical perspective on argumentation should reveal 'both the proponent's and opponent's active and interrelated roles in the course of a dialectical weighing up of supporting and opposing elements in social contexts' (Leitão, 2000: 339). In argumentation, claims are put forward and may be either supported or challenged by various types of evidence. These moves are interrelated in terms of ideational meaning, but are also exchanged interactively among participants in the choreography of argument. The key feature of our analysis is that it tracks this exchange of views as claims are put forward, supported and challenged.

In the e-conferencing data, we originally classified argumentation separately from social, procedural, and other instructional talk. This distinction, however, proved difficult to maintain. The key criterion for identifying a move as argumentative was that it formed part of the negotiation of claims, yet in real life discussions claims are not always easily identified (Erduran et al., 2004). Where logical relationships were left implicit, it was difficult to be certain whether or not a piece of information was intended to be taken as evidence for or against a particular claim, and it seemed better to regard this type of material as contributing to a gradually expanding pool of data which participants could draw on in building arguments, whether with explicit or implicit reasoning. Rather than trying to maintain a clear distinction between 'argument' and other moves, we therefore created a looser category of 'discussion' that incorporates such potentially argumentative moves together with those that are unambiguously argumentative.

The system that we finally developed involves identifying moves within one of the following categories:

- Discussion: moves which form part of (or potentially contribute to) the on-topic argument;
- Social: moves primarily concerned to construct or negotiate solidarity/community;
- Procedural: moves establishing and maintaining the conditions which allow the discussion to take place (including both IT and organisational issues);
- Other field-related: Moves that can be roughly classified as 'classroom talk', and cannot be classified under any of the three categories defined above.

Since our focus was on student argumentation, we aimed to analyse 'discussion' moves exhaustively, but within the other three categories, we identified only particularly salient types of move. The complete coding scheme is shown in Appendix 4. There are parallels with Toulmin's argument model (1958), but a key difference is that our approach aims to capture how claims are supported by functional moves particular to historical discourse rather than Toulmin's more general categories of data, warrant and backing.

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Central to our analysis of the discussion moves is the claim, or contestable proposition (including thesis, recommendation and counterclaim moves). Each claim move is coded with an identifying number, and moves relating to that claim are given the same reference number, enabling us to track the way that a claim, once put forward, is either advanced, challenged or (in the case of the e-conference data) ignored by other participants.

In analysing student argumentation, there is a danger that the analyst may infer relationships that were not intended by the participant, creating an idealised interpretation that represents not what participants actually did, but what they should or could have done. To avoid overinterpretation, we coded all moves for function regardless of whether or not they might be related to a particular claim. The numbering system, however, allows us to distinguish those moves which are clearly related to a claim, and therefore argumentative, from those where the relationship is no more than a weak inference; we term these ‘integrated’ and ‘unintegrated’ moves. While argumentation in the essays tended to be hierarchically structured, the e-conferences had a looser structure where one claim ‘drifted’ into another. To account for this, the coding system allows for a new claim to be related to a previous claim. This system enabled us to track the gradually developing network of relationships between claims and supporting or challenging moves. Although designed specifically to cater for the e-conference data, it is flexible enough to be applied to the essay data as well, allowing direct comparison across the two modes.

Corpus analysis of textual data

A linguistic corpus is a machine-searchable collection of text which can be examined using specially designed software to provide detailed evidence about the way language is used within that corpus, or in comparison with other corpora. Using a concordancer (Wordsmith Tools), we examined specific lexical and grammatical differences and similarities between the e-conference and essay data. This helped to identify salient features of argumentation in the two modes. Corpus searches were run under a range of categories, looking at the language associated with:

- referring to the process of argumentation
- advancing claims
- logical structuring
- modality and hedging
- informality

The items searched for were partly determined in advance, as hypotheses about plausible linguistic realisations of argumentation, and partly drawn from the data, when we noted unexpected ways to propose, support or challenge claims.

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Interviews

While the textual data provides the main focus of this research, the information it gives us about the outcomes of the e-conferencing and essay-writing has also been supplemented by interviews with teachers and students both before and after the e-conferencing. They enabled us to compare the way the participants' views had (or had not) been changed by the experience of e-conferencing.

The interviews were semi-structured, with the same questions posed in both schools, but with follow-up questions to explore responses in more detail. History teachers and ICT network managers were interviewed individually for about 45 minutes, while students were interviewed in groups of three for about 30 minutes. Group interviews were used to help students feel comfortable and encourage them to speak. All interviews were digitally recorded and transcribed in full.

Results

In this section we:

- draw on both textual and interview data to consider the nature of argumentation in e-conferencing and essays in general, and the performance of our sample of students in particular
- identify the most significant differences in the two modes
- consider how teachers can be supported in relating the development of argumentation skills in e-conferencing to their development in essays.

The structure of argumentation in e-conferencing

Overall students spent much of the e-conference – an average 55.2% of all t-units – in on-topic discussion (Appendix 5). However, the use of message headers could give a misleading impression of coherence as within the same message thread students often discussed several different claims, or put forward information that was not directly integrated into the argumentation. We found that the e-conferencing was marked by a complexity of argument strands (i.e. chains of moves relating to a particular claim) simultaneously unfolding in relation to different sub-topics. The tendency in all five e-conferences, for argument strands to disperse rather than build towards an overall position suggests that this may be what makes e-conferencing a distinctive medium. With little pressure to establish a stable or overarching point of view, students can explore a range of different viewpoints which may in turn trigger new lines of thinking.

Interweaving with the argument strands, we also found frequent, though usually short sequences more concerned with developing and maintaining social relations than with building ideational meaning. Across the five groups, an average 18.6% of total t-units was given over to social interaction, with students encouraging or teasing each other rather than discussing the question (Appendix 5). This accords with existing research suggesting that the social dimension is important in facilitating discussion (Beuchot and Bullen, 2005). Significantly, the group with the lowest proportion of social interaction also had

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the least focussed debate, as shown by the high proportion of on-topic information that was not integrated into the argument (Appendix 5).

The length and composition of argument strands varied considerably both within and across each group. Appendix 8 provides one example, showing how nine different strands unfolded in parallel during e-conference 3. Some of these failed to develop in that claims were left unsupported, and none reached an overall conclusion (in the form of a thesis move) in relation to the general topic under debate. The data showed several different ways in which argument strands might develop:

- cumulative support for a position i.e. build up of support moves by different students in relation to a particular claim;
- successful dialogic exchange involving challenges, shifts and fine-tuning of positions;
- unsuccessful dialogic exchange where students are beginning to engage with other positions but without fully understanding or connecting with them;
- empty trading of claims;
- undeveloped strands where claims are left unsupported,

Almost half the argument strands are of the first type, cumulative support, reflecting current history-teaching practice – students learning to make a point and supporting it with evidence. A comment from Michelle's interview typifies how students and teachers described argument: *You need evidence to back up what you are saying*. Interestingly, however, more than half the new claims (56%) were not supported by their proposer, suggesting that not all students felt it necessary to support their position (Appendix 6). Also interesting is over half of all supporting moves involved explanation of cause and effect; this was the most frequent type of evidence used in all groups except the less successful group 1, which favoured description. Counter-factual reasoning, exemplification, and historical recount occurred infrequently.

Whilst our analysis pointed to students' success in collaboratively strengthening claims, this was true only of some claims. Out of the 67 claims made, 29 received no response, indicating that not all students were able or motivated to engage in sustained argumentative dialogue. In addition, although in interviews the students reported that they enjoyed arguing, particularly challenging and being challenged, refuting and counterclaiming were in fact relatively uncommon.

It is clear that the students we investigated need to further develop their argumentation skills. It also seems likely that, since the majority of students interviewed reported higher participation in online discussion than in classroom discussions, e-conferencing provides a useful forum in which to do this.

Argumentation language in e-conferencing

The most obvious general language feature in the e-conferences was students' use of textese and street slang (see occurrences listed in Appendix 11). Students said they did this for ease/speed of typing, from familiarity with online messaging, and because it allowed them to play with language and create an online identity. Corpus searches also revealed a high frequency of *I* and the connectors *so* and *because/cos/cos* (see Appendix 15), indicative of the informal conversational style of e-conferencing.

Despite these informal features, however, topic-specific words (e.g. Munich Putsch, reparations, Hindenberg) were correctly used, and students were able to use tentative rather than categorical statements, even in textese, to reflect a view of historical ideas as provisional and open to debate:

*Wel I tink dat da Nazis cumin in 2 power was **mostly** due 2 avin such a gd leader*

The negotiation with a range of alternative views on an issue may encourage students to express viewpoints as provisional in e-conferencing, to a greater extent than in their written essays.

The structure of argumentation in written essays

Whilst there was variation in the way argumentation was structured in the essays a typical pattern was for students to begin by previewing their argument. The most successful essays (using National Curriculum assessment levels) covered both sides of the argument. In these cases, students outlined two or more perspectives on the issue and then moved through a series of claims with support moves (see Appendix 10). Some included counterclaims, plus a thesis at the end of the essay.

In contrast essays regarded as less successful often lacked an argumentative framing tending to explain or narrate events without integrating them into the argument, and were more likely to have no counterclaims or thesis.

The language of argumentation in written essays

Corpus searches revealed a surprisingly high frequency of *I* – sometimes used with *think/believe* to express tentativeness but also in introducing and concluding essays. The most common logical connectors were the relatively informal *so* and *because*, the connectors with the greatest frequency in the e-conferences and more commonly associated with spoken conversation. These findings are perhaps more indicative of our particular students' stage of development than of the medium itself. However, it is important to note that stylistic conventions such as the use of *I* are not currently stable. Student views on essay-writing were mixed. When asked to compare spoken and written modes some students said essay-writing was very difficult but more regarded it as easy:

I find it is pretty much the same. You write what you say or say what you write. (Andrew)

I think it is the easiest kind of writing (Thomas)

Our analysis, however, shows that their confidence was somewhat misplaced.

The relationship between e-conferencing and essay-writing

Our analysis showed a number of clear differences between students' argumentation in e-conference and in the essays. The e-conferences contained more claims, and no thesis moves. By contrast the essays showed fewer claim moves and some thesis moves. This reflects the e-conference's use for rehearsing rather than 'fixing' viewpoints and the

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essays' purpose of setting out a definitive position. The essays were also distinguished by more integrated information and greater reasoning (Appendix 7).

The main language differences were in the use of textese, many instances in the e-conferences and none in the essay and by a greater use of provisional language in the e-conference (Appendix 15). Again this reflects their differing functions. While some lexical differences between the e-conferences and essays may reflect significant differences in argumentation, others are merely stylistic conventions of the medium, or derive from the interactive nature of the discourse which, like conversation, allows for more feedback, repair, and requests for clarification.

Similarities included the unexpected frequency of informal features such as *I* and the connectors *so/because* in both contexts. However, initial teacher concern that the use of textese might transfer into student essay-writing proved unfounded.

Pedagogical Implications

In general, the findings suggest that e-conferencing lends itself to the collective combining of diverse sources of information and ideas. Whilst there is considerable variation in performance across the student group associated with their current attainment levels students visibly and co-operatively engage in knowledge construction. It also seems that students enjoy countering and challenging in the e-conferencing mode. Given the particularly significant connection between countering moves and conceptual development (Leitão, 2000; 2001) this finding points to the need for tasks and teacher strategy to encourage it.

In particular, our evidence showed that, just as in the classroom, students need to be kept on task in e-conferences, but since everything is more visible online, this requires new techniques. A striking example occurred when the level of participation in one group plummeted after the teacher criticised an inappropriate student comment. Similarly the absence of stepped tasks and integrated activities within the e-conferences undoubtedly contributed to the significant non-participation of lower-attaining students. In one class twelve of the fourteen students forecast GCSE grade C or above contributed but only two of the fourteen forecast grade D or below.

Finally, our analysis showed no clear transfer in the quality of student arguing from the e-conference to the essays. Whilst in the e-conferences students showed their understanding of the provisional nature of historical interpretation and negotiated a range of viewpoints, this was not the case in the essays. Teachers will need to develop skills in transferring the learning from one medium to the other. They will need to further develop students' awareness of the different levels of informality and formality associated with e-conferencing and essays and further expand students' linguistic repertoires.

In sum, teachers require explicit training in the use of this new teaching environment. They need to develop their confidence in the medium and they need to adapt their existing teaching skills in the four main areas of:

- Class management;
- Structuring the learning;

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- Questioning;
- Summarising the learning.

Activities

To date, the work of the project has been disseminated to the secondary history teaching community, including teachers, teacher trainers and local authority advisers through the following activities:

- face-to-face workshops for over fifty teachers in venues around the country including Leeds, Warwick, Milton Keynes, London, Chichester and Weymouth (further sessions scheduled);
- an online conference discussing argumentation in history through TeachandLearn.net. the Open University online continuing professional development programme;
- two online e-moderator training courses for history teachers;
- a history conference for over 100 Year 10 pupils drawn from four classes across two schools in West Sussex;
- a history conference for over 80 Year 10 and 11 pupils drawn from four classes across two schools in Dorset and Somerset (more history conferences are planned).

The work of the project has been disseminated to the academic community through the presentation of papers at seven academic conferences with a further five either already accepted or submitted.

Outputs

The team have:

- created the Arguing in history website, with guidelines for practice, which can be accessed by both teachers and academics;
- produced a framework for analysis of argumentation in e-conferences and essays which will be made publicly available;
- produced seven conference papers which are currently being reworked as journal articles for publication in international academic journals;

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- published the article, 'What's your claim? Developing pupils' historical argument skills using asynchronous text based computer conferencing' (March 2007), in *Teaching History*, Issue No 126, the secondary teacher journal of the Historical Association (circulation 3,500).

Impacts

Presentations by the team have led to:

- interest from a significant number of history teachers across England;
- development projects on history e-learning in West Sussex (currently two schools with a further seven having expressed a firm interest in becoming involved in the next one planned) and Dorset local authorities;
- work with the National Academy for Gifted and Talented Youth on guidance materials for its conferencing site;
- an invitation by the influential government agency, British Educational Communications and Technology Agency to give a presentation at their Annual Research Conference.

Future Research Priorities

Profitable lines of research include:

- further testing of the analytical framework in new contexts
- analysis of face-to-face argumentation as an additional point of comparison
- analysis of argumentation (if it occurs) in history textbooks.

Ethical Considerations

In making ethical decisions we were guided by the ethical codes of practice of the British Educational Research Association (<http://www.bera.ac.uk/guidelines.html>) and the British Association for Applied Linguistics (<http://www.baal.org.uk/goodprac.htm>). All staff working with children had Criminal Records Bureau clearance, and data was stored as required by the 1998 Data Protection Act.

This proposal was also approved by the Open University's Human Participants and Materials Ethics Committee. Open University research is regulated by the university's research governance procedures, as specified in the policy document *Academic integrity*:

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code of good practice in research and the guidelines available at
<http://intranet.open.ac.uk/research/ethics/>.

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Appendix 2: Student participants

Group	Pseudonym	M/F	School	Posted to e-conference	Interviewed		Essay received		Attainment(See note* ¹)
					Pre-cmc	Post-cmc	Pre-cmc	Post-cmc	
1	Andrew	m	2	yes	yes		yes	yes	6
1	Bashaar	m	2	yes			yes		5
1	Christopher	m	1				yes		F
1	Daniel	m	2	yes					5
1	Emily	f	2	yes					6
1	Jessica	f	1				yes	yes	F/G
1	Joshua	m	1	yes	yes	yes	yes	yes	C
1	Matthew	m	1				yes		D/E
1	Michael	m	1	yes	yes	yes	yes	yes	A/B
1	Sarah	f	2	yes	yes	yes			5
1	Zahira	f	1		yes	yes	yes	yes	D/E
2	Amanda	f	1	yes	yes	yes	yes	yes	B/C
2	Brandon	m	1	yes				yes	C
2	David	m	1					yes	C/D
2	Elizabeth	f	2	yes	yes	yes			5
2	James	m	2	yes					6
2	John	m	2	yes					5
2	Megan	f	2	yes				yes	7
2	Nicholas	m	1	yes			yes	yes	F
2	Raeesah	f	1	yes			yes	yes	A/B
2	Ryan	m	2	yes	yes	yes	yes		5
2	Samantha	f	1				yes		F/G
3	Anthony	m	1	yes	yes		yes	yes	A
3	Eleanor	f	1				yes	yes	A/B
3	Hannah	f	2	yes	yes	yes	yes	yes	7
3	Jennifer	f	2	yes			yes		7
3	Jonathan	m	2		yes			yes	6
3	Justin	m	1	yes			yes	yes	A
3	Lauren	f	1	yes	yes	yes	yes		D/E
3	Rachel	f	2	yes	yes				6
3	Robert	m	2	yes		yes			6
3	Stephanie	f	1	yes	yes	yes	yes	yes	C
3	William	m	1	yes		yes	yes	yes	C

PTO

¹ Attainment for school 1 is shown as GCSE predicted grade. Attainment for school 2 is shown as end of Year 9 predicted national curriculum level

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Group	Pseudonym	M/F	School	Posted to e- conference	Interviewed		Essay received		Attainment(S ee note* ²)
4	Amber	f	1				yes		C/D
4	Austin	m	1				yes	yes	D/E
4	Courtney	f	1	yes			yes	yes	E
4	Danielle	f	2	yes	yes	yes	yes		6
4	Eric	m	1	yes			yes	yes	C/D
4	Latifah	f	2	yes				yes	6
4	Nicole	f	1				yes		E
4	Samuel	m	2	yes			yes	yes	6
4	Steven	m	2						6
4	Thomas	m	1	yes	yes	yes	yes	yes	B
4	Victoria	f	2	yes				yes	5
5	Brian	m	2	yes			yes	yes	6
5	Chelsea	f	2	yes				yes	6
5	Ian	m	2					yes	6
5	Katherine	f	1						D
5	Michelle	f	2	yes	yes	yes	yes		6
5	Paul	m	1	yes	yes	yes	yes	yes	B
5	Peter	m	1						D
5	Rebecca	f	1	yes			yes	yes	C
5	Tahira	f	2	yes			yes		D/E

² Attainment for school 1 is shown as GCSE predicted grade. Attainment for school 2 is shown as end of Year 9 predicted national curriculum level

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Appendix 3: Summary of data collected

	School 1	School 2	Total
Amount of e-conference data (in words)	na	na	8,368
No. of pupils participating in e-conferences	16	22	38
No. of pre-conference essays	25	9	34
Amount of pre-conference essay data (in words)	9116	4651	13767
No. of post-conference essays	20	10	30
Amount of post-conference essay data (in words)	10017	3427	13444
No. of students interviewed	10	10	20
No. of teachers interviewed	1	2	3
No. of ICT network managers interviewed	1	1	2

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Appendix 4: Analytical framework

DISCUSSION	Examples
The first five all involve contestable propositions that may be challenged/supported	
Claim A contestable proposition relating to how things are (analytic)	I think the nazis got into power because they had a bit of luck with the wall street crash.
Thesis An overall position on an issue (at a higher level of generality than a claim) is put forward (i.e. a thesis statement)	As much as there are good things about Hitler's leadership, there were also a lot of events that were beyond Hitler's control.
Recommendation A contestable proposition relating to how things should be (hortatory)	All of the MPs should go to the north and stay up there for life.
Counterclaim A claim which takes an alternative position to a previous claim	I disagree that luck was that important because Hitler deliberately used his skills to persuade people.
Claim / Support A claim which includes supporting evidence or reasoning in the same move	Hitler was a very good speaker, as he was able to manipulate the german people into thinking that jews and communists were to blame for the downfall of the German Empire.
Informing Information or reasoning which is put forward as part of the on-topic discussion; these moves may be either integrated (used to support a claim) or unintegrated (not linked to any particular claim, but available as potential support for a claim).	
<i>recount</i> A recount of a series of actions or events	In 1914 he joined da army an faught in WW1 nd got a medal 4 bravery. In 1918 he felt dat germany was betrayed bi da government.
<i>description</i> Information about the nature or condition of a person, place, object or concept	Hitler was a loud speaker and always tried his hardest to get his points across,
<i>counterfactual explanation</i> Reasoning that speculates on what might have happened	Without this deal Hitler would not be able to become the vice president of Germany.
<i>explanation</i> Other logical reasoning, involving explicit causal relationships	I think that the wallstreet was very useful to hitler because the great deprsession led him to look like a saviour.
<i>exemplification</i> One or more specific examples of a general point	i.e. whan he got put in jail he used the court to get across his point by making a huge speech and getting the judge on his side and the rest of the court.
<i>other information</i> Any other material which is part of the specified on-topic discussion, but does not fall into one of the above categories	In his time Hitler would kill a lot of Jewish people.
Agreement A previous claim is confirmed by a participant agreeing with it	i agree that hitler used propaganda in most of his speeches so he could get more votes to become chancellor

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Refutation	
A questioning or criticism of an argument or claim made in a previous turn, (or in a forum outside the e-conference such as a textbook, academic article etc.) No new claim is made, unlike Counterclaim	he wouldnt of just been offered chacellor because he had forced them to give him the job
Concession	
Recognises the validity of an alternative viewpoint expressed in a previous turn. This move is subsidiary to a claim being put forward by the writer	I can understand what you are saying boy [<i>but i still think that the people of germany would not have agreed to the holocaust if they were warned.</i>]
Argument Prompt	
A question designed to stimulate and prompt participants' views on an issue	bt do u agree dat the nazis came 2 pwere coz dey had hitler??...
Information Prompt	
A question designed to stimulate participants to provide information as part of the on-topic discussion	I don't understand, how did making the German currency worthless make Hitler powerful?
Issue	
The overall issue to be debated is identified (without indication of the stance or approach to be taken by the writer)	Hitler's leadership was the main reason Nazis came to power in 1933. Do you agree? (<i>essay heading</i>)
Preview	
The direction of the forthcoming discussion or section of discussion is explicitly introduced	This essay is about whether it was Adolph Hitler's leadership that brought the Nazis to power or whether he was given an advantage as a result of things he could not control.
Summary	
Preceding discussion points are explicitly summarised or completed	in this essay i have discussed the good and the not so good points of the 'great' reform act and i have proven that it wasn't that great at all!
SOCIAL	Examples
Encouragement	
Participants motivate and encourage each other	I like those facts william lol
Teasing	
Participants denigrate each other or each others' contributions, playfully or otherwise (opposite of Encourage)	omg mandy wat u chaffin on bout !!!!!
Deferring	
Participant minimises own contribution and/or seeks reassurance from others	I don't kno if they are 100% reliable so don't shout at me if they are wrong:
Salutation	
Participants open contributions with a greeting	hi meg it's lizzy
Signing off	
Participants close contributions	luv rebecca (9ama)
Other	
	oi john do u no a gal called jessica
PROCEDURAL	Examples
Problem	
Describes and/or asks for assistance with a procedural problem (relating to technical issues or other conditions that affect the ability to carry out the task)	Do you know how to view what you've already written? If so right back!

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Help

Provides information intended to help with procedural matters

POST SOMETHING
THEN CLICK ON YOUR NAME.
CLICK ON EDIT USER INFO
THEN U CAN CHANGE URE DISPLAY NAME.

Directive

Moves in which a participant (normally the tutor) instructs participants how to carry out the task

Please try to keep your posts to the subject.

Other

Dude, this is so cool! I can reply myself!

OTHER FIELD-RELATED

Examples

Elicitation

Any move intended to elicit factual information which is related to the wider educational field but not part of the specified on-topic discussion itself

Oh... then when did the Holocaust happen sir?

Informing

Any move providing factual information which is related to the wider educational field but not part of the specified on-topic discussion itself

Hitler had a half brother called Alois Hitler who had a bar in germany

Other

(includes explicit teacher evaluation of student contributions, or student evaluations in same style)

You are right Raecesah,

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Appendix 5: Comparison of categories of interaction across e-conference groups

As percentage of total t-units	Group 1	Group 2	Group 3	Group 4	Group 5	Average
Discussion	52.8	66.5	49.3	60.8	47.3	55.2
<i>integrated informing moves</i>	9.8	21.4	18.3	22.5	20.2	18.6
<i>unintegrated informing moves</i>	26.0	15.9	5.7	3.9	6.2	11.2
Social	6.5	14.8	24.5	14.7	27.9	18.6
Procedural	8.1	10.4	7.0	9.8	9.3	8.8
Other	32.5	7.7	19.2	14.7	15.5	17.4
Total no. of posts	33	62	61	37	39	46.4
Total no. of t-units	123	182	229	102	129	153

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Appendix 6: Comparison of argumentation moves across e-conference groups

	Group 1	Group 2	Group 3	Group 4	Group 5
Number of claims/counterclaims made by students	8	15	15	15	13
Number of claims/counterclaims made by teacher/moderator	0	1	0	0	0
Number of claims/counterclaims responded to by teacher/moderator	0	3	0	0	0
Number of claims/counterclaims responded to by other students	4	9	9	8	8
Number of claims/counterclaims left hanging (not responded to)	4	8	6	6	5
Number of claims/counterclaims not backed up by supporting moves by their proposer	4	13	4	7	8
Number of claims supported by informing moves (of various types)	5	7	11	7	8
Number of counterclaims supported by informing moves (of various types)	0	1	1	1	1
Number of new claims linked to previous claims	0	8	4	5	4
Number of agreeing moves there	5	4	17	4	4
Number of concessive moves	0	4	2	5	1
Number of argument prompts	2	9	3	2	0
Number of information prompts	1	5	0	0	1
Number of refuting moves	0	3	2	1	0
Number of counterclaim moves	0	3	1	2	1

Appendix 7: Comparison of argumentation moves across e-conferencing and essays

As percentage of all t-units within Discussion category	Pre-conferencing essays	Post-conferencing essays	e-conferences
Thesis	0.9	1.5	0.0
Claim & Claim/Support	13.6	8.6	20.5
Recommendation	0.7	0.0	0.0
Counterclaim	1.3	0.4	4.0
Integrated information	48.8	57.3	33.6
<i>recount</i>	6.2	10.0	0.9
<i>description</i>	25.3	20.9	9.5
<i>counterfactual reasoning</i>	0.1	1.9	3.3
<i>explanation</i>	11.8	21.3	17.3
<i>exemplification</i>	0.2	0.8	2.4
Unintegrated information	28.6	23.8	20.3
<i>recount</i>	5.3	6.3	5.2
<i>description</i>	17.9	8.4	12.5
<i>counterfactual reasoning</i>	0.0	0.2	0.0
<i>explanation</i>	1.0	6.6	2.1
<i>exemplification</i>	0.0	0.2	0.0
Agreement	0.0	0.0	9.9
Refutation	0.5	0.0	2.1
Concession	0.2	0.1	4.0
Argument Prompt	0.0	0.0	4.5
Information Prompt	0.0	0.0	0.9
Issue	0.7	2.6	0.0
Preview	3.6	3.9	0.0
Summary	1.1	1.9	0.0

Appendix 8: Sample summary chart (Tutorial 3)

The chart represents argumentation in the e-conference. Each claim is numbered along the top, and moves relating to that claim are shown in the column below, in the order that they occurred in the discussion. Participants are indicated by initials on the left.

Participant	Claims								
	01	02	03	04	05	06	07	08	09
Je	descr								
Je	CLAIM+								
Ra	↓	CLAIM							
Ra	agree	↓							
Je		agree							
Ra		agree							
Ra		eg							
Ro		↓	CLAIM						
Ro			descr						
Ro			descr						
Ro		claim							
W		agree							
Ju		agree							
Ju		↓		descr					
Ju		claim		CLAIM					
W				counter	COUNTER				
W				↓	descr				
Ju					conc				
Ju				claim	↓				
Ju				reasn	reasn				
W					c-fact				
W					conc				
Ju									
W		reasn							
W		reasn							
W		claim				CLAIM			
Ju		agree				↓			
S						agree			
L			agree						
W			↓				CLAIM		
Ju	claim								
W	explan								
S								CLAIM	
S								reasn	
Ra			claim						
Ra									CLAIM
Ro	claim								
Ro	explan								

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Appendix 9: Sample analysis of e-conference data (Tutorial 3)

Message header	Participant	T-unit number		Discussion	Social	Procedural	Other	Supports / challenges	New claims
Nazi promises!	Jennifer	1	The nazis promised that they would make germany a better country	descr				01	
Nazi promises!	Jennifer	2	this is imortant to germany because they went down big time since the wall street crash happend in 1929 because they had to pay alot of money to America!!	claim				01	01 Importance of Wall St Crash
nazi propaganda	Rachel	3	the nazi's used propaganda to gain ore votes!!	claim				02	02 Nazis used propaganda to gain votes
Nazi promises!	Rachel	4	yer i no !!!	agree				01	
Nazi promises!	Rachel	5	weel i reakon u r rght	agree					
Nazi promises!	Rachel	6	n plus u r in the same group as me		#s				
nazi propaganda	Jennifer	7	yes i agree!!!!!!	agree				02	
Nazi promises!	Rachel	8	yer i no lol !!	agree				02	
Nazi promises!	Rachel	9	were in da same group		#s				
Nazi promises!	Rachel	10	so ders reli no point lol!!		#s				
nazi propaganda	Rachel	11	well you should coz i am always rght!!!		tease				
nazi propaganda	Rachel	12	coz of dat thing dat hitler did in the court n da posters!!!!	eg				02	

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Hitlers rise to power	Robert	13	I belive that Hitler would not of got as much power as he eventually did if he did not have the persuasive skills that he possesded.	claim				03	03 Hitler gained power thro' persuasive skills
Hitlers rise to power	Robert	14	He was a very powerful speaker	descr				03	
Hitlers rise to power	Robert	15	and manipulated people with his words.	descr				03	
Hitlers rise to power	Robert	16	He used propaganda to fool the people of Germany into thinking he was the right person to vote for.	claim				02	
Hitlers rise to power	Robert	17	He belived that the treaty of Versailles was wrong and an insult to Germany.	descr				#	(unintegrated)
Hitlers rise to power	Robert	18	He also had a solution...	descr					
no	Rachel	19	yer i no		tease				
hitler!	William	20	i agree that hitler used tha propaganda to get votes!	agree				02	
hitler!	William	21	it did play a big part in the election thing!!	agree					
hitler!	William	22	this page takes time 2 load then even more time 2 actually get 2 typ what u think!! lol....			#p			
hitler!	Justin	23	I agree with you that hitler used propaganda yo get votes for the nazi party.	agree				02	
hitler!	Justin	24	He did not mention a lot of the policies he would carry out if he became leader, such as the holocaust.	descr				04	
hitler!	Justin	25	I think that if the people knew what he would do they would not have voted for him.	claim				02	04 Hitler only gained power by hiding intentions
hitler!	William	26	well justin my friend i think most ppl knew that he was gonna killa all tha jews cos of them big talks he gave at that "club" thing.	counter				04	05 Germans aware of plans for Holocaust
hitler!	William	27	and on the video they were cheerin wen he sed "KILL ALL THE JEWS"	descr				05	
hitler!	William	28	(he basicly sed that)	descr					
hitler!	William	29	p.s add me on msn @ william@msn.com		#s				
hitler!	William	30	Bye		sign				
hitler!	Justin	31	I can understand what you are saying boy	conc				05	
hitler!	Justin	32	but i still think that the people of germany would not have agreed to the holocaust if they were warned.	claim				04	

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hitler!	Justin	33	If you were a german in this time would you support such a thing??	explan				04	
hitler!	Justin	34	PS william the holocaust was when hitler killed the Jews		tease				
hitler!	Justin	35	I know its quite a long word:P		tease				

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Appendix 10: Sample analysis of essay data (Stephanie)

Participant	T-unit number		Discussion	Social	Procedural	Other	Supports / challenges	New claims
Stephanie	1	Hitler's' and the Nazis rise to power	issue					
	2	In my essay I am going to discuss reasons to agree or disagree with the question 'Hitler's leadership skills was the main reason the nazis got in to power.'	pre					
	3	I will also say my opinion.	pre					
	4	I agree to a certain extent that his leadership skills got them into power	thesis				01	01 Nazi rise caused by several factors
	5	but I also believe there was other reason as well.	thesis					
	6	First of all I am going to discuss reasons to agree with the question.	pre					
	7	Most of Germany thought that Hitler was a very strong powerful leader	claim				01	02 Hitler's strong leadership crucial in Nazi rise
	8	and that did play a crucial part in the Nazis rise too power.	claim					
	9	He led the nazi party with a confident attitude to most things.	explan				03	
	10	As he was so confident he made excellent public speeches and campaigns.	claim				01	03 Hitler made excellent speeches/campaigns
	11	When making his speeches he seemed to be able to identify the audience he was speaking to and fill them with hope.	descr				03	
	12	Hitler and the Nazis made many promises to get them into power as well.	claim				01	04 Nazi promises were a factor
	13	They said they could 'solve Germanys economic problems, provide strong leadership skills, ignore the treaty of Versailles, build up a strong army and make Germany a better country.'	descr				04	
	14	And yes over many years he managed to fulfil all of those promises.	descr					

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15	The promises they made did make a difference to why they came into power	explan				04	
16	after people had heard them they automatically thought the nazi was a good party if they could carry out the promises.	explan					
17	Their promises were designed to appeal to everyone from businessmen to farmers to factory workers and even housewives.	descr				04	
18	The nazi party was flexible in what they said	descr				04	
19	they would try a new policy	descr					
20	and if it were unpopular they would drop it.	descr					
21	The Nazis were a well-organized party mainly because of Hitler.	explan				#	(unintegrated)
22	Nazi propaganda was a main reason they came into power also as the support then grew for that party.	claim				01	05 Nazi propaganda a main reason for rise
23	Some people thought that the only solution to making Germany a better place was the Nazis.	explan				05	
24	I am going to discuss the reasons to disagree, events beyond Hitler's control.	pre					
25	The Nazis were very fortunate that they had weak opposition as if that was different they might not of got into power.	claim				06	06 Nazis were aided by weak opposition
26	Also people were scared of the communists	claim				07	07 Fear of communism helped
27	so that took a party out of it, to help Nazis get into power.	explan				07	
28	Hitler couldn't control most things though for instance the Wall Street crash and the great depression,	descr				#	(unintegrated)
29	these were only a few of things.	descr					
30	To get Hitler into power he wanted to become president	explan				#	(unintegrated)
31	but due to Hindenburg taking a dislike to Hitler that wasn't going to happen.	explan					
32	Hitler and von Papen teamed up	descr				#	(unintegrated)
33	and that's when the political deal came about	descr					
34	which made Hitler chancellor.	descr					
35	Overall I would say that even though Hitler's leadership skill did play a major part in the Nazis rise to power it wasn't just that	thesis				01	
36	many other things got them into power as well.	thesis					

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37	I do believe though that if Hitler didn't exist then it would have been very difficult for the nazis to gain power but not impossible.	c-fact				01
38	The things Hitler couldn't control sometimes helped him out too.	explan				01

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Appendix 11: Comparison of most frequent words in e-conference and post-conference essay data

N	E-conference data	Frequency	Percentage	N	Essay data	Frequency	Percentage
1	THE	415	4.9594	1	THE	939	6.9845
2	HE	243	2.9039	2	TO	454	3.377
3	TO	213	2.5454	3	AND	383	2.8489
4	OF	175	2.0913	4	HITLER	319	2.3728
5	AND	173	2.0674	5	WAS	314	2.3356
6	WAS	169	2.0196	6	OF	300	2.2315
7	#	162	1.9359	7	A	248	1.8447
8	I	158	1.8881	8	HE	242	1.8001
9	A	157	1.8762	9	IN	224	1.6662
10	HITLER	152	1.8164	10	THAT	201	1.4951
11	THAT	127	1.5177	11	NAZIS	181	1.3463
12	IN	110	1.3145	12	THEY	163	1.2124
13	THEY	82	0.9799	13	POWER	146	1.086
14	THINK	66	0.7887	14	PEOPLE	141	1.0488
15	HIS	65	0.7768	15	FOR	138	1.0265
16	IT	63	0.7529	16	WERE	135	1.0042
17	BECAUSE	62	0.7409	17	GERMANY	132	0.9819
18	WOULD	61	0.729	18	THIS	130	0.967
19	NAZIS	60	0.717	19	#	121	0.9
20	HAD	59	0.7051	20	S	116	0.8628
21	ON	57	0.6812	21	BECAUSE	115	0.8554
22	HIM	54	0.6453	22	AS	107	0.7959
23	IF	54	0.6453	23	I	104	0.7736
24	SO	54	0.6453	24	HIS	94	0.6992
25	PEOPLE	53	0.6334	25	IT	87	0.6471
26	POWER	48	0.5736	26	HAD	83	0.6174
27	THIS	47	0.5617	27	MADE	82	0.6099
28	IS	46	0.5497	28	LEADERSHIP	79	0.5876
29	NOT	46	0.5497	29	ALSO	76	0.5653
30	FOR	45	0.5378	30	NOT	75	0.5579
31	HAVE	45	0.5378	31	WOULD	75	0.5579
32	DID	43	0.5139	32	SO	72	0.5356
33	AS	40	0.478	33	WITH	70	0.5207
34	WERE	39	0.4661	34	PARTY	68	0.5058
35	WITH	39	0.4661	35	THERE	67	0.4984
36	BUT	38	0.4541	36	GERMAN	63	0.4686
37	DO	38	0.4541	37	HIM	63	0.4686
38	YOU	38	0.4541	38	COULD	62	0.4612
39	DA	35	0.4183	39	WALL	62	0.4612
40	GERMANY	35	0.4183	40	CRASH	61	0.4537
41	LOL	35	0.4183	41	CHANCELLOR	60	0.4463
42	U	35	0.4183	42	INTO	60	0.4463
43	USED	35	0.4183	43	REASON	60	0.4463
44	ALL	34	0.4063	44	WHICH	59	0.4389
45	ALSO	34	0.4063	45	NAZI	57	0.424
46	AGREE	33	0.3944	46	THEM	57	0.424
47	WHAT	33	0.3944	47	VERY	56	0.4165
48	GET	31	0.3705	48	CAME	55	0.4091

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49	LEADER	31	0.3705	49	GREAT	55	0.4091
50	GOT	30	0.3585	50	STREET	53	0.3942
51	WALL	29	0.3466	51	BUT	51	0.3794
52	CRASH	28	0.3346	52	T	50	0.3719
53	THEN	27	0.3227	53	HAVE	48	0.357
54	AT	26	0.3107	54	MANY	48	0.357
55	JEWS	24	0.2868	55	DEPRESSION	47	0.3496
56	THEM	24	0.2868	56	LEADER	47	0.3496
57	BY	23	0.2749	57	ON	47	0.3496
58	INTO	23	0.2749	58	MAIN	46	0.3422
59	NO	23	0.2749	59	PAPEN	45	0.3347
60	COULD	22	0.2629	60	THINK	44	0.3273
61	N	22	0.2629	61	DEAL	43	0.3198
62	NAME	22	0.2629	62	GOOD	42	0.3124
63	CHANCELLOR	21	0.251	63	THEIR	42	0.3124
64	MORE	21	0.251	64	GOT	40	0.2975
65	VERY	21	0.251	65	OTHER	40	0.2975
66	ABOUT	20	0.239	66	VON	39	0.2901
67	BE	20	0.239	67	ALL	38	0.2827
68	HOW	20	0.239	68	WHEN	38	0.2827
69	ONE	20	0.239	69	DID	37	0.2752
70	PARTY	20	0.239	70	PROBLEMS	37	0.2752
71	ARE	19	0.2271	71	BECAME	36	0.2678
72	GERMAN	19	0.2271	72	GET	36	0.2678
73	LIKE	19	0.2271	73	IS	36	0.2678
74	MADE	19	0.2271	74	USED	36	0.2678
75	NAZI	19	0.2271	75	BE	35	0.2603
76	STREET	19	0.2271	76	CONTROL	35	0.2603
77	GOOD	17	0.2032	77	SUPPORT	35	0.2603
78	ONLY	17	0.2032	78	TREATY	35	0.2603
79	THERE	17	0.2032	79	AT	34	0.2529
80	WELL	17	0.2032	80	SKILLS	34	0.2529
81	PUBLIC	16	0.1912	81	WHY	34	0.2529
82	WHICH	16	0.1912	82	FROM	33	0.2455
83	SOME	15	0.1793	83	MAKE	33	0.2455
84	TREATY	15	0.1793	84	PARTIES	32	0.238
85	WHY	15	0.1793	85	VERSAILLES	31	0.2306
86	X	15	0.1793	86	BY	30	0.2231
87	CHANGE	14	0.1673	87	THINGS	30	0.2231
88	GAIN	14	0.1673	88	ONLY	29	0.2157
89	MONEY	14	0.1673	89	WANTED	29	0.2157
90	POWERFUL	14	0.1673	90	ESSAY	28	0.2083
91	PROMISES	14	0.1673	91	LIKE	28	0.2083
92	PROPAGANDA	14	0.1673	92	MONEY	28	0.2083
93	REALLY	14	0.1673	93	ABOUT	27	0.2008
94	TIME	14	0.1673	94	IF	27	0.2008
95	CAME	13	0.1554	95	UP	27	0.2008
96	FROM	13	0.1554	96	AGREE	26	0.1934
97	GERMANS	13	0.1554	97	GERMANS	26	0.1934
98	HELPED	13	0.1554	98	HELPED	26	0.1934
99	HITLERS	13	0.1554	99	MORE	26	0.1934
100	IM	13	0.1554	100	ONE	26	0.1934

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Appendix 12: List of keywords in e-conference data

Keywords are words which appear significantly more often in a given text than would be expected on the basis of their frequency in a reference corpus. The keywords in the e-conference and post-conference essay data have been computed using Oxford Wordsmith Tools (Scott, 2004) on the basis of a probability of less than .001, using over 3 million words of written text from a version of the British National Corpus – known as BNC Baby – as the reference corpus.

REFERENCE No. RES-000-22-1453

N	Essay data	Freq.	%	RC. Freq.	RC. %	Keyness
1	HITLER	152	1.8164	18		1687.4
2	NAZIS	60	0.717	30		596.31
3	LOL	35	0.4183	0		414.48
4	DA	35	0.4183	5		384.37
5	HE	243	2.9039	25696	0.8275	265.09
6	GERMANY	35	0.4183	221		211.4
7	POWER	48	0.5736	780	0.0251	206.13
8	AGREE	33	0.3944	186		206.12
9	THINK	66	0.7887	2069	0.0666	204.05
10	JEWS	24	0.2868	43		197
11	U	35	0.4183	310		189.65
12	CRASH	28	0.3346	141		180.57
13	NAZI	19	0.2271	25		164.93
14	LEADER	31	0.3705	299		163.07
15	I	158	1.8881	17695	0.5699	158.7
16	HITLERS	13	0.1554	0		153.92
17	BECAUSE	62	0.7409	2771	0.0892	152.68
18	CHANCELLOR	21	0.251	100		137.51
19	IM	13	0.1554	5		132.67
20	WALL	29	0.3466	414	0.0133	131.45
21	DIDNT	11	0.1315	0		130.23
22	PROPAGANDA	14	0.1673	28		112.44
23	TREATY	15	0.1793	50		107.64
24	PEOPLE	53	0.6334	3071	0.0989	106.98
25	WUD	9	0.1076	0		106.55
26	VERSAILLES	9	0.1076	1		100.06
27	DAT	10	0.1195	5		99.325
28	PROMISES	14	0.1673	49		99.278
29	GERMAN	19	0.2271	207		95.632
30	YH	8	0.0956	0		94.713
31	JUSTIN	10	0.1195	8		93.706
32	DEY	8	0.0956	1		88.439
33	DONT	9	0.1076	5		88.331
34	FINK	8	0.0956	2		84.716
35	N	22	0.2629	458	0.0147	84.34
36	MSN	7	0.0837	0		82.873
37	PPL	7	0.0837	0		82.873
38	WAS	169	2.0196	28582	0.9205	82.364
39	GERMANS	13	0.1554	73		81.257
40	CLICK	10	0.1195	20		80.31
41	USED	35	0.4183	1779	0.0573	78.344
42	GAIN	14	0.1673	119		76.889
43	VOTES	13	0.1554	92		75.777
44	DID	43	0.5139	2963	0.0954	74.498
45	ND	6	0.0717	0		71.033
46	PAPEN	6	0.0717	0		71.033
47	TASH	6	0.0717	0		71.033
48	HOLOCAUST	8	0.0956	10		70.036

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49	HITLER'S	7	0.0837	4		68.474
50	COZ	6	0.0717	1		65.297
51	NAME	22	0.2629	767	0.0247	63.727
52	MUNICH	7	0.0837	7		63.502
53	COS	7	0.0837	8		62.188
54	WOT	6	0.0717	2		62.047
55	POWERFUL	14	0.1673	211		62.024
56	HOTMAIL	5	0.0598	0		59.194
57	NEVA	5	0.0598	0		59.194
58	PUTSCH	5	0.0598	0		59.194
59	PWER	5	0.0598	0		59.194
60	SED	5	0.0598	0		59.194
61	WAT	5	0.0598	0		59.194
62	WER	5	0.0598	0		59.194
63	WIV	5	0.0598	0		59.194
64	THEY	82	0.9799	11354	0.3657	58.949
65	VON	7	0.0837	12		57.929
66	GOT	30	0.3585	1888	0.0608	56.382
67	WOULD	61	0.729	7215	0.2324	56.344
68	POSTERS	7	0.0837	15		55.432
69	X	15	0.1793	357	0.0115	53.805
70	PS	6	0.0717	7		53.126
71	SO	54	0.6453	6275	0.2021	51.16
72	ADOLF	5	0.0598	2		50.829
73	COM	5	0.0598	2		50.829
74	TUTORIAL	5	0.0598	2		50.829
75	STREET	19	0.2271	773	0.0249	49.835
76	GD	7	0.0837	26		48.907
77	THA	5	0.0598	3		48.625
78	URE	5	0.0598	3		48.625
79	HIM	54	0.6453	6532	0.2104	48.221
80	HELPED	13	0.1554	291		48.09
81	ADDY	4	0.0478	0		47.355
82	ALOT	4	0.0478	0		47.355
83	DARR	4	0.0478	0		47.355
84	DNT	4	0.0478	0		47.355
85	DOO	4	0.0478	0		47.355
86	HITLAR	4	0.0478	0		47.355
87	HU	4	0.0478	0		47.355
88	KNO	4	0.0478	0		47.355
89	NAZI'S	4	0.0478	0		47.355
90	RGHT	4	0.0478	0		47.355
91	WID	4	0.0478	0		47.355
92	WOZ	4	0.0478	0		47.355
93	YEH	4	0.0478	0		47.355
94	GET	31	0.3705	2446	0.0788	46.999
95	VOTE	12	0.1434	241		46.785
96	ADVANTAGE	11	0.1315	191		45.843
97	DIS	5	0.0598	5		45.358

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98	LUCK	9	0.1076	102		44.63
99	CLAUSES	6	0.0717	18		44.138
100	LISTEN	9	0.1076	110		43.369
101	EDIT	5	0.0598	7		42.931
102	WEN	4	0.0478	1		42.356
103	COMMUNISTS	6	0.0717	22		42.055
104	DEPRESSION	7	0.0837	49		40.938
105	HATED	8	0.0956	85		40.628
106	RITE	5	0.0598	10		40.152
107	HEY	6	0.0717	29		39.119
108	SPEAKER	11	0.1315	272		38.683
109	PARTY	20	0.239	1229	0.0396	38.359
110	IF	54	0.6453	7549	0.2431	38.104
111	MANDY	4	0.0478	3		37.81
112	DO	38	0.4541	4342	0.1398	36.846
113	BOUT	5	0.0598	15		36.781
114	ALSO	34	0.4063	3622	0.1166	36.293
115	HAV	4	0.0478	4		36.286
116	LOTS	7	0.0837	74		35.615
117	BOWT	3	0.0359	0		35.516
118	CUD	3	0.0359	0		35.516
119	CUZ	3	0.0359	0		35.516
120	DUDE	3	0.0359	0		35.516
121	ECT	3	0.0359	0		35.516
122	GOVERNMENT	3	0.0359	0		35.516
123	HAPPEND	3	0.0359	0		35.516
124	MCH	3	0.0359	0		35.516
125	MENT	3	0.0359	0		35.516
126	MRE	3	0.0359	0		35.516
127	OTHA	3	0.0359	0		35.516
128	POWERFULL	3	0.0359	0		35.516
129	PROPAGNDA	3	0.0359	0		35.516
130	STRNGER	3	0.0359	0		35.516
131	THATS	3	0.0359	0		35.516
132	TINK	3	0.0359	0		35.516
133	UR	3	0.0359	0		35.516
134	WASNT	3	0.0359	0		35.516
135	WLD	3	0.0359	0		35.516
136	XXXXXXX	3	0.0359	0		35.516
137	APPOINTED	8	0.0956	121		35.384
138	ERIC	6	0.0717	50		33.166
139	JEWISH	6	0.0717	52		32.732
140	PUBLIC	16	0.1912	914	0.0294	32.626
141	AINT	3	0.0359	1		31.022
142	HS	3	0.0359	1		31.022
143	REICHSTAG	3	0.0359	1		31.022
144	YEAH	6	0.0717	69		29.589
145	TOAST	5	0.0598	34		29.506
146	RISE	10	0.1195	371	0.0119	27.849

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147	YEA	3	0.0359	3		27.214
148	YA	4	0.0478	17		26.996
149	BLAMED	5	0.0598	46		26.724
150	BIN	4	0.0478	21		25.484
151	ST	10	0.1195	426	0.0137	25.414
152	WILLIAM	8	0.0956	241		25.261
153	BUNKER	4	0.0478	22		25.148
154	BI	3	0.0359	5		24.957
155	CHANGE	14	0.1673	942	0.0303	24.763
156	JUDGE	7	0.0837	176		24.401
157	LIKED	8	0.0956	258		24.279
158	OF	175	2.0913	92879	2.9912	-25.98
159	BE	20	0.239	20036	0.6453	-28.34

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Appendix 13: List of keywords in post-conference essay data

Keywords are words which appear significantly more often in a given text than would be expected on the basis of their frequency in a reference corpus. The keywords in the e-conference and post-conference essay data have been computed using Oxford Wordsmith Tools (Scott, 2004) on the basis of a probability of less than .001, using over 3 million words of written text from the BNC Baby as the reference corpus.

REFERENCE No. RES-000-22-1453

N	Essay data	Freq.	%	RC. Freq.	RC. %	Keyness
1	HITLER	319	2.3728	18		3342.2
2	NAZIS	181	1.3463	30		1801.8
3	GERMANY	132	0.9819	221		974.41
4	POWER	146	1.086	780	0.0251	791.59
5	S	116	0.8628	646	0.0208	620.07
6	LEADERSHIP	79	0.5876	104		611.65
7	NAZI	57	0.424	25		520.52
8	PAPEN	45	0.3347	0		490.34
9	CHANCELLOR	60	0.4463	100		443.02
10	CRASH	61	0.4537	141		418.51
11	PEOPLE	141	1.0488	3071	0.0989	406.47
12	GERMAN	63	0.4686	207		394.98
13	DEPRESSION	47	0.3496	49		379.52
14	VON	39	0.2901	12		369.4
15	VERSAILLES	31	0.2306	1		328.87
16	WALL	62	0.4612	414	0.0133	310.93
17	BECAUSE	115	0.8554	2771	0.0892	310.87
18	TREATY	35	0.2603	50		266.61
19	REASON	60	0.4463	629	0.0203	251.75
20	LEADER	47	0.3496	299		239.76
21	T	50	0.3719	413	0.0133	231.43
22	PARTY	68	0.5058	1229	0.0396	218.31
23	WAS	314	2.3356	28582	0.9205	205.71
24	STREET	53	0.3942	773	0.0249	190.57
25	PROMISES	26	0.1934	49		186.89
26	MADE	82	0.6099	2712	0.0873	176.8
27	HINDENBURG	16	0.119	0		174.31
28	GERMANS	26	0.1934	73		169.9
29	MAIN	46	0.3422	644	0.0207	168.79
30	DIDN	16	0.119	1		166.71
31	COMMUNISM	18	0.1339	8		164.07
32	THEY	163	1.2124	11354	0.3657	162.93
33	DEAL	43	0.3198	580	0.0187	160.67
34	SKILLS	34	0.2529	271		159.54
35	WEAK	26	0.1934	97		157.23
36	GREAT	55	0.4091	1300	0.0419	150.34
37	PARTIES	32	0.238	278		145.14
38	PROPAGANDA	19	0.1413	28		143.82
39	WERE	135	1.0042	9255	0.2981	137.8
40	CAME	55	0.4091	1553	0.05	133.32
41	COMMUNISTS	17	0.1265	22		131.97
42	COULDN	12	0.0893	0		130.73
43	BECAME	36	0.2678	520	0.0167	130.03
44	AGREE	26	0.1934	186		127.08
45	REICHSTAG	12	0.0893	1		123.69
46	ALSO	76	0.5653	3622	0.1166	118.53
47	HE	242	1.8001	25696	0.8275	115.25
48	ESSAY	28	0.2083	319	0.0103	113.18

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49	COMMUNIST	18	0.1339	63		110.83
50	SPEECHES	15	0.1116	26		109.79
51	HELPED	26	0.1934	291		105.93
52	SUPPORT	35	0.2603	712	0.0229	104.9
53	CMC	10	0.0744	1		102.25
54	CONTROL	35	0.2603	757	0.0244	101.1
55	PROMISED	20	0.1488	142		98.021
56	JEWS	15	0.1116	43		97.479
57	EVENTS	25	0.186	322	0.0104	95.477
58	PROBLEMS	37	0.2752	962	0.031	94.936
59	WASN	9	0.0669	1		91.552
60	VOTE	22	0.1636	241		90.49
61	HITLERS	8	0.0595	0		87.15
62	PAPAN	8	0.0595	0		87.15
63	CAUSED	24	0.1785	348	0.0112	86.503
64	DOC	10	0.0744	10		81.3
65	WEIMAR	8	0.0595	1		80.88
66	VERY	56	0.4165	2897	0.0933	80.154
67	STRONG	25	0.186	521	0.0168	73.845
68	MANY	48	0.357	2347	0.0756	72.873
69	OPPOSITION	17	0.1265	186		69.956
70	THINK	44	0.3273	2069	0.0666	69.484
71	SPEAKER	19	0.1413	272		68.915
72	RISE	21	0.1562	371	0.0119	68.213
73	ADOLF	7	0.0521	2		66.738
74	REASONS	19	0.1413	291		66.596
75	BANKRUPT	9	0.0669	15		66.419
76	POWERFUL	17	0.1265	211		66.058
77	ADOLPH	6	0.0446	0		65.362
78	GERMANYS	6	0.0446	0		65.362
79	WANTED	29	0.2157	904	0.0291	65.347
80	VOTED	13	0.0967	87		65.098
81	GOT	40	0.2975	1888	0.0608	62.923
82	BELIEVE	25	0.186	671	0.0216	62.749
83	THINGS	30	0.2231	1107	0.0357	59.109
84	SOLVE	12	0.0893	86		58.603
85	GOOD	42	0.3124	2247	0.0724	57.933
86	MONEY	28	0.2083	1022	0.0329	55.671
87	THIS	130	0.967	14438	0.465	55.417
88	LOTS	11	0.0818	74		54.977
89	USED	36	0.2678	1779	0.0573	54.041
90	COUNTRY	23	0.1711	678	0.0218	54.012
91	WHY	34	0.2529	1595	0.0514	53.802
92	POLITICAL	26	0.1934	923	0.0297	52.893
93	EXTREME	12	0.0893	119		51.524
94	SO	72	0.5356	6275	0.2021	50.512
95	DISAGREE	7	0.0521	15		48.864
96	RALLIES	6	0.0446	6		48.778
97	COULD	62	0.4612	5143	0.1656	47.325

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98	ADVANTAGE	13	0.0967	191		46.537
99	FARMERS	10	0.0744	82		46.392
100	WORTHLESS	6	0.0446	8		46.309
101	VOTES	10	0.0744	92		44.3
102	ARMY	13	0.0967	211		44.201
103	LOANS	8	0.0595	41		43.89
104	WOULD	75	0.5579	7215	0.2324	43.732
105	SCHLEICHER	4	0.0298	0		43.574
106	WOULDN	4	0.0298	0		43.574
107	BLAME	11	0.0818	131		43.566
108	PUBLIC	23	0.1711	914	0.0294	42.506
109	CONCLUSION	12	0.0893	182		42.267
110	POVERTY	10	0.0744	103		42.245
111	BLAMED	8	0.0595	46		42.243
112	HAPPENED	17	0.1265	479	0.0154	41.235
113	LOT	20	0.1488	706	0.0227	40.869
114	INTO	60	0.4463	5394	0.1737	39.789
115	FEAR	14	0.1041	315	0.0101	39.447
116	CHARISMATIC	5	0.0372	6		39.361
117	UNEMPLOYED	9	0.0669	89		38.687
118	STOCK	12	0.0893	218		38.372
119	FACTORS	13	0.0967	272		38.298
120	VICE	9	0.0669	93		37.967
121	THEM	57	0.424	5133	0.1653	37.678
122	GET	36	0.2678	2446	0.0788	37.064
123	MAKE	33	0.2455	2137	0.0688	36.212
124	TO	454	3.377	78729	2.5355	34.784
125	IGNORE	8	0.0595	80		34.225
126	HYPER	4	0.0298	3		34.039
127	LOUDSPEAKERS	4	0.0298	3		34.039
128	IMPORTANT	22	0.1636	1060	0.0341	33.879
129	BUILD	10	0.0744	168		33.378
130	THAT	201	1.4951	30160	0.9713	32.756
131	SLIDESHOWS	3	0.0223	0		32.68
132	WEIMER	3	0.0223	0		32.68
133	HITLER'S	4	0.0298	4		32.518
134	STARTED	15	0.1116	503	0.0162	31.937
135	UNPOPULAR	5	0.0372	16		31.553
136	HIM	63	0.4686	6532	0.2104	31.387
137	FRANZ	4	0.0298	5		31.252
138	LOST	17	0.1265	691	0.0223	30.787
139	GOVERNMENT	23	0.1711	1284	0.0414	30.228
140	PERSUASIVE	5	0.0372	19		30.068
141	DID	37	0.2752	2963	0.0954	29.888
142	LED	14	0.1041	486	0.0157	28.995
143	DESPERATE	7	0.0521	80		28.246
144	DEMOCRAT	6	0.0446	48		28.102
145	HELP	20	0.1488	1055	0.034	27.998
146	INSPIRATIONAL	4	0.0298	11		26.271

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147	REPARATIONS	3	0.0223	2		25.967
148	INCREASED	11	0.0818	351	0.0113	24.34
149	CRASHED	6	0.0446	68		24.302
150	POSTERS	4	0.0298	15		24.147
151	AT	34	0.2529	16678	0.5371	-25.22
152	BEEN	13	0.0967	9481	0.3053	-26.18
153	ON	47	0.3496	21417	0.6897	-27.64
154	CAN	4	0.0298	5858	0.1887	-27.91
155	OF	300	2.2315	92879	2.9912	-29.15
156	OR	13	0.0967	10130	0.3262	-30.08
157	BY	30	0.2231	16919	0.5449	-32.97
158	BE	35	0.2603	20036	0.6453	-40.03
159	YOU	15	0.1116	13472	0.4339	-45.92
160	HAS	4	0.0298	8331	0.2683	-46.5
161	ARE	13	0.0967	14516	0.4675	-58.74
162	#	121	0.9	54678	1.7609	-69.82
163	IS	36	0.2678	31749	1.0225	-106.9

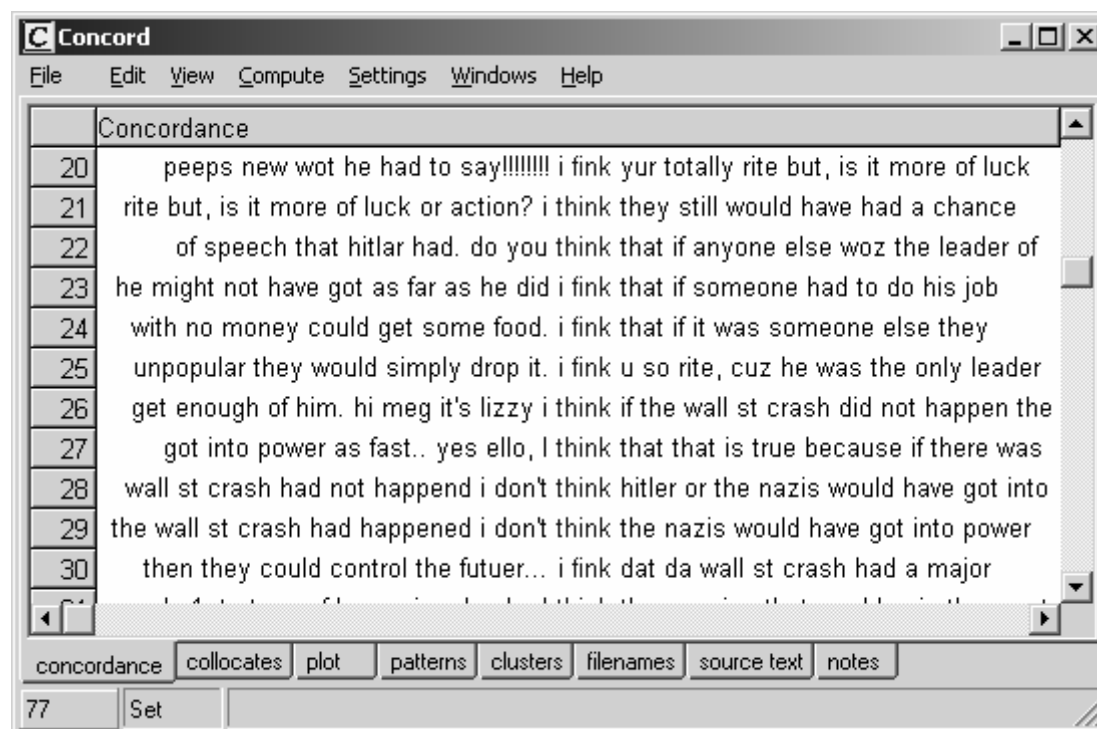
REFERENCE No. RES-000-22-1453

Appendix 14: Concordancing samples

Concordancing software such as Oxford Wordsmith Tools (Scott, 2004) makes it possible to investigate how particular lexical or grammatical items are used within a large collection of text. Figure 1 illustrates one of the searches we carried out to examine how students advance claims using verbs of mental process, in this case 'think' (in the e-conference data, often spelt 'fink' or 'tink'). The software lists every use of 'think/fink/tink' found anywhere in the data, together with the words accompanying it to the left and right. Each such concordance line can be expanded to show more and more of the surrounding context, as illustrated in Figure 2. A plot can also be generated showing the distribution of the term through the text (Figure 3, thus indicating whether it tends to cluster in particular places.

This approach has been used to support our investigation of the language used in the e-conferencing and essay data. Some of the findings generated by corpus searches are shown in the appendices that follow, although our analysis of this data is still continuing.

Figure 1: Concordance lines



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Figure 2: Expanded context of concordancing lines

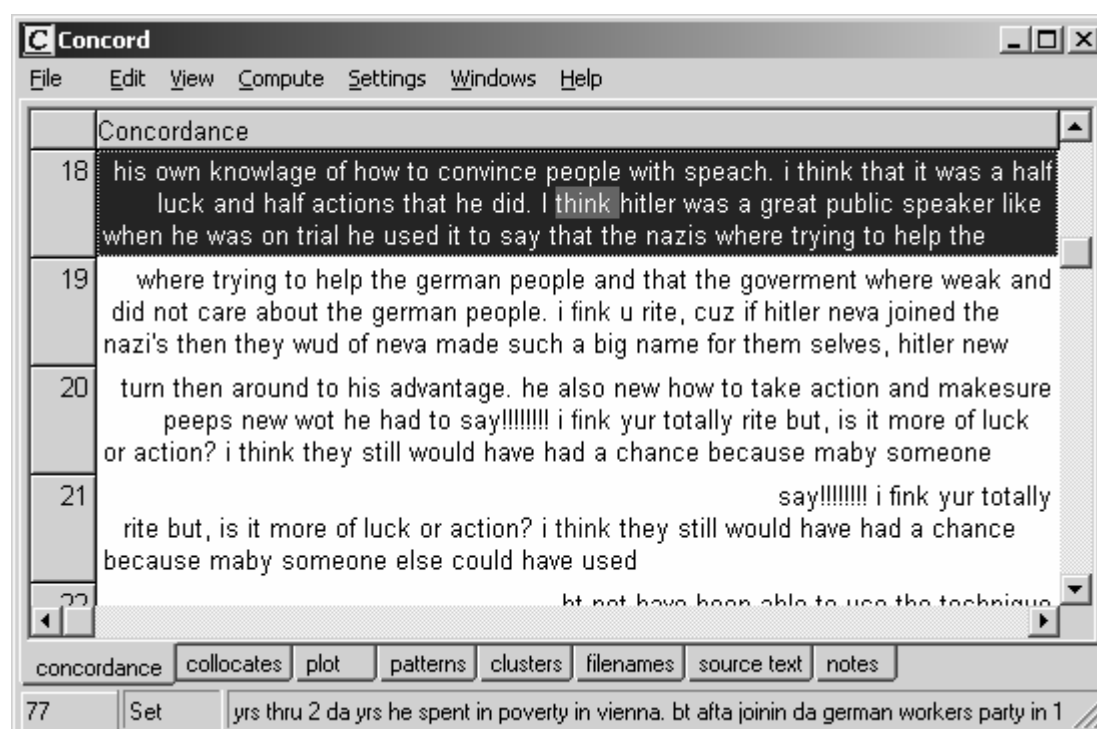
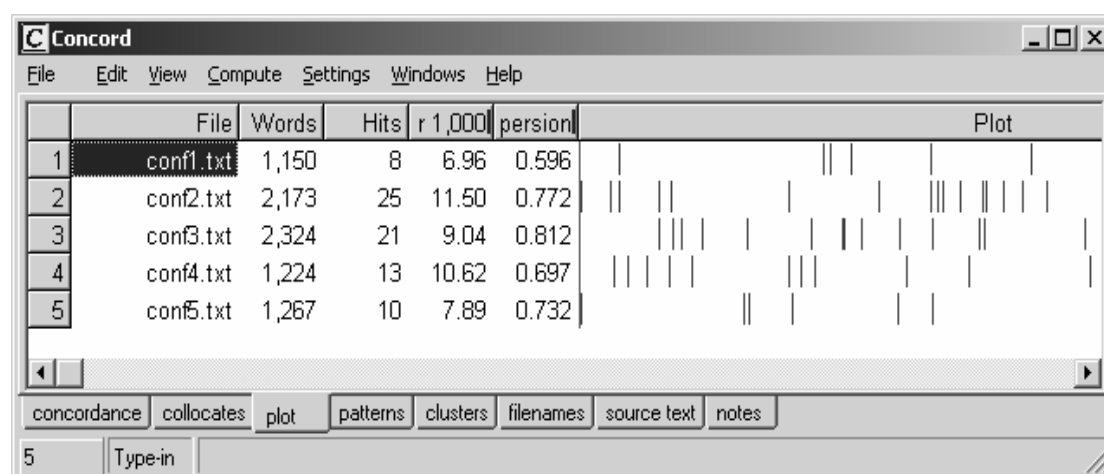


Figure 3: Plotting occurrences of search term



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Appendix 15: Results of corpus searches on language of argumentation

Wordsmith Tools (Scott, 2004) was used to search the corpus of e-conference data and post-conference essay data for particular lexical items related to argumentation. Search terms were identified, where necessary using brackets to indicate optional forms, a slash (/) for alternative forms or an asterisk (*) as a wildcard character. The resulting list of occurrences was manually checked to exclude any irrelevant occurrences (eg *point* meaning *tip* rather than *argument*). To allow comparison across e-conference and essay data, figures indicate frequency per 500 words of text.

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Search terms	Frequency per 500 words		Notes
	e-conferences	essays	
Explicit references to the task as involving a process of argumentation			
point	0.05	0.15	
discussion	0.00	0.00	
argu*	0.00	0.10	
idea	0.00	0.00	
view	0.00	0.00	
opinion	0.00	0.20	
claim	0.00	0.00	
debate	0.00	0.00	
position	0.00	0.00	
Explicit references to the task as involving reasoning/evidence	e-conferences	essays	
reason	0.40	2.25	
factor	0.00	0.05	
cause	0.05	0.05	
outcome	0.00	0.00	
consequence	0.05	0.05	
result	0.05	0.05	
Explicit logical structuring: reason	e-conferences	essays	
therefore	0.10	0.20	
so	0.10	2.10	
then (causal not temporal)	0.50	0.20	
thus	0.00	0.00	
hence	0.00	0.00	
consequen*	0.05	0.05	
because (of)	3.70	4.30	
cos	0.35	0.00	
coz	0.30	0.00	
cause	0.05	0.05	
due to	0.05	0.20	
since	0.00	0.05	
Explicit logical structuring: contrast	e-conferences	essays	
but	1.80	1.90	
however	0.25	0.55	
on the other hand	0.00	0.10	
nonetheless/nevertheless	0.00	0.00	
yet	0.00	0.05	
Explicit logical structuring: addition	e-conferences	essays	
and	9.75	14.25	
nd/n	1.60	0.00	
also	1.90	2.85	
as well (as)	0.05	0.30	
in addition	0.00	0.05	

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moreover	0.00	0.00	
Modality and hedging devices	e-conferences	essays	
may	0.05	0.15	
seem	0.00	0.05	
can	0.00	0.05	
might	0.40	0.05	
perhaps	0.00	0.00	
could	0.30	0.20	
probab*	0.05	0.05	
maybe / may be	0.10	0.05	
possib*	0.00	0.00	
appear*	0.00	0.00	
sure	0.10	0.00	
certain	0.05	0.05	
of course	0.00	0.00	
have to/has to/had to	0.00	0.05	in strong recommendations or as part of expressions of opinion, e.g. <i>I have to disagree</i>
must	0.10	0.00	
obvious*	0.05	0.05	
natural*	0.00	0.00	
(un)clear*.	0.00	0.00	
Advancing claims through use of I+mental process or similar	e-conferences	essays	
I *ink*	3.90	1.15	Includes <i>think, tink</i> and <i>fink</i> ; the last two found only in e-conference data
I thought	0.05	0.05	
I reckon/reakon	0.10	0.00	
I find	0.05	0.00	
I suppose	0.05	0.00	
I mean	0.05	0.00	
I bet	0.05	0.00	
I believe/I beleive	0.00	0.55	
I feel/felt	0.00	0.05	
I see/saw	0.00	0.00	
I say/would like to say	0.00	0.20	
I guess	0.00	0.00	
I know	0.00	0.00	
I assume	0.00	0.00	
I imagine	0.00	0.00	
I realise/realize	0.00	0.00	
I (do) agree/d	1.60	0.35	Includes 1 case of <i>I don't agree</i>
I disagree/d	0.05	0.10	
I will decide	0.00	0.05	
I will discuss	0.00	0.05	
I will explain	0.00	0.05	
I will choose	0.00	0.05	
Informal style: personal pronouns	e-conferences	essays	

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I	9.45	3.85	
me	0.65	0.05	
my	0.70	0.30	
myself	0.05	0.00	
mine	0.10	0.00	
we	0.70	0.05	
us	0.05	0.00	
our (selves)	0.25	0.05	
you/your/yourself	3.15	0.30	0

REFERENCE No. RES-000-22-1453

Appendix 16: Interview schedule for students (before e-conference)

History

What are you studying at the moment in history?

What do you like most about studying history?

What do you like least about studying history?

What do you find most difficult?

In history you usually have to make an argument. What do you think you need to do to make a good argument in history?

Do you find it easy to write an argument?

Do you enjoy taking part in discussions? Why?

Do you plan to choose history as one of your GCSE options?

Computer conferencing

Do you have Internet access at home?

Do you use it for schoolwork?

Do you use computer conferencing or similar? (e.g. chat rooms, message boards) If so what?

Do you think computer conferencing would have any advantages in history?

What problems might you experience?

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Appendix 17: Interview schedule for students (after e-conference)

Did you enjoy the computer conference? Why or why not?

Did it meet your expectations?

Did you have any problems in gaining access to the conference? Were they solved? If yes how, when, and by whom?

Where were you when you made your posts?

How did you decide what reason to post on?

How did you decide what posts to reply to?

How did you go about composing your posts? Did you hand write them first or did you type them straight away?

Did you check/correct/edit any posts? If yes why, when and how?

Were there any replies to any of your posts that you particularly remember? Why?

How well do you think your discussion group worked?

What contribution did you make to this?

Did you say more or less than in a normal classroom discussion?

How did it compare to MSN?

Do you think that the conference has helped you to get better at history? How or why?

Do you think the conference has improved your argument skills? How or why?

What did you think was the answer to the 'big question' at the beginning of the conference? (The most important reason why the Nazis came to power in 1933 was that they had Hitler as a leader. Do you agree?)

What did you think at the end?

Did your opinion change? If so how and why?

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Appendix 18: Interview schedule for teachers (before e-conference)

History

What, to you, is the purpose(s) of teaching history in schools?

How do you see your role in the history classroom? (facilitator/interventionist)

What role do you think that argument plays in history?

How do you encourage students' skills in argument? (oral/written/ICT)

What is the purpose of student group discussions/debates?

Are there any particular techniques that you use to lift the level of debate? (e.g. different forms of questioning)

Do you get students to use their skills of argument in writing? How? (Prompt for definition of essay when they raise it)

What about the difference between explaining and arguing? Is that a useful distinction?

What are the strengths in your students' skills in argument?

What are the weaknesses in your students' skills in argument?

How do you know? (draw out assessment measures/criteria)

ICT

What personal use of ICT do you make?

What use do you make of ICT within your teaching of history?

Do you think that there have been benefits from using ICT within your teaching of history in the classroom?

What barriers are there to your use/greater use of ICT within your teaching of history?

Computer conferencing

What does computer conferencing mean to you? (Explain asynchronous text conferencing)

Have you used computer conferencing as a learner/ teacher?

What experience of computer conferencing do your students have?

What benefits for students' skills in argument would you expect?

Do you anticipate any problems?

What level of access to the Internet do your students have at school/ home?

Is there anything you wanted to raise/talk about?

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Appendix 19: Interview schedule for teachers (after e-conference)

Did you enjoy the computer conference? Why or why not?

Before the conference

How did you introduce the conference to your class?

What preparation did you do with pupils to prepare them for the:

- mechanics of using the conference?
- arguing dimension of the conference?
- history dimension of the conference?

Did you experience any technical problems in gaining access to the conference for a) yourself, b) your pupils at any time during the conference?

Were there any differences between home and school?

Were these problems solved?

If so when and by whom?

During the conference

How frequently did you personally access the conference?

Did you read all pupil posts or just those in your mini conference? Why?

Where were you when you read pupil posts?

When did you read pupil posts?

How much time did this take?

Did you find the conferencing posed any questions/issues for you as a teacher – e.g. how/to what extent to intervene, style of writing, role etc.

Did you make any posts yourself? Why or why not?

Did you have to delete any posts during the conference? Why?

How did you follow this up with the pupil/s concerned?

Did you ask any pupils to amend any posts during the conference? Why?

How did you follow this up with the pupil/s concerned?

How did you communicate with pupils during the conference?

How did the fact that the conference was going on affect what you did in your history lessons with the class?

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Pupil response

How do you view your pupils' response to the conference overall?

What about those pupils who did not contribute?

How well do you think the discussion groups worked? Were there any that performed better than others?

What did you think about the quality of the pupils' individual posts?

Did any stand out? Why?

What did you think about pupils' use of textsize, colour, fonts and name changes?

Did any pupils say more or less than in a normal classroom discussion?

Do you think the conference affected students' learning/attitude towards history? If so, how? If not/why not?

Based on your experience of the conferencing, do you think it has potential for developing students' argumentation skills? How/why? (bring out here, in particular, whether they think it has any impact on the quality of argument, reasoning, reflection etc.)

Pupil final essays

Can you see any relationship between what they were doing/saying in the conference and what they say in their essays?

Changes

If you were doing this conference again what changes would you make and why?

Would you use conferencing again? If so when, what on, with whom and why?

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Appendix 20: Interview schedule for ICT network managers (before e-conference)

ICT

What is your background in ICT? (e.g. teaching?)

What level of ICT expertise do students have on arrival in school?

What sorts of skills do your ICT courses equip them with by the time they reach Year 9?

Computer conferencing

What experience do you have of computer conferencing?

What experience of computer conferencing do your students already have?

What computer conferencing software does your school use?

What experience of supporting computer conferencing do you have?

What support can be available over the 3 week conference?

What technical problems do you anticipate?

What level of access to the Internet do your students have at school/ home? (Details of times and places)

What benefits for students' thinking/ writing do you expect?

How about arguing?

What problems might students encounter?

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Appendix 21: Interview schedule for ICT network managers (after e-conference)

How do you think the conference went? What evidence is your view based upon? (Did they visit the conference, read the posts, talk to historians?)

Before the conference

What requests for help did you receive from a) staff, b) pupils?

How were you able to respond to these?

Were there any problems that you could not solve?

What actions did you try?

Who did you contact for support?

During the conference

What requests for help did you receive from a) staff, b) pupils?

How were you able to respond to these?

Were there any problems that you could not solve?

What actions did you try?

Who did you contact for support?

Are there any problems still unsolved?

What actions are being taken to try and solve them?

Are there any problems that cannot be solved?

Changes

If the history department were to run another conference what changes would you advise them to make and why?

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Appendix 22: Sample interview data: post-conference pupil interview in School 1

30th March 2006

- | | |
|-------------|---|
| Interviewer | Thanks you three for missing part of your history lesson to do the interview. Now the first question is just about the computer conference itself, did you enjoy it? |
| Joshua | Yeah |
| Interviewer | So you enjoyed it Joshua, what was it about it that you enjoyed? |
| Joshua | It is just because I am good at computers and I like it so it is good that they mix it together really, plus we can talk to other schools and what they think. |
| Interviewer | Right so that is what you enjoyed, OK, anything else – no and Michael did you enjoy it. |
| Michael | I enjoyed it, I just like computers and it was good to see other people's opinions and what they thought as well. |
| Interviewer | OK thank you and Zahira? |
| Zahira | I have had a few problems getting in but I look forward to interacting with Walton High. |
| Interviewer | So you would like to get involved, but you have had problems getting in, we will talk about that in a minute then. So if I asked you just as another question about the whole thing, was it how you thought it was going to be, did it meet your expectations of a computer conference? |
| Michael | Yeah it did because I have been on other little postings, where you post, but not on history just like other things and it was just like that. |
| Interviewer | OK what other things have you been on like that then? |
| Michael | Like games and stuff where you post stuff. |
| Interviewer | OK so nothing to do with school, but to do with games, what sort of games? |
| Michael | Just like computer games. |
| Interviewer | I see so it was |
| Michael | Exactly set up just like that really, so it was easy for me to use. |
| Interviewer | Was it, and who was running that, was it something to do with the game? |

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Michael	I think so yeah.
Interviewer	You think it was, OK, so it was what you expected, it met your expectations. How about you then Joshua?
Joshua	Yeah I didn't exactly know what it was going to be set out like or what it would be like so it was kind of new for me, but I think it was set out pretty good – pretty good.
Interviewer	Right OK. Now the next question is did you have any problems in gaining access to the conference and were they solved, so let's start with Zahira.
Zahira	Yeah I had problems getting in and I haven't got in yet.
Interviewer	OK.
Zahira	But my teacher is going to sort it out soon hopefully.
Interviewer	OK so what have you actually done to try to get in, you have had to do this at home haven't you?
Zahira	Yeah, I think there was a problem with my computer because the security is quite high and that is why I can't get in, but they are sorting out that problem now.
Interviewer	So this is your computer at home has got high security?
Zahira	Yeah.
Interviewer	Have you been anywhere else, your teacher mentioned he suggested you could try the local library to see if you could get in from there, have you tried that?
Zahira	No, not yet.
Interviewer	So you have just tried from home and you couldn't get in from there because yes, because when we set it up I tested all of your school's and I could get in as you from the public library where I live – OK. So you have had problems, they have not been solved.
Zahira	Yeah
Interviewer	OK and do you know what your teacher is going to try and do to solve your problem, you said he was going to try and help you?
Zahira	He said he was talking to the university where they sort out the problem.
Interviewer	Right so this was to do with getting on in school then, because you can't get on in school can you as a class. OK how about you Joshua did you have any problems?

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- Joshua Yeah because I have high security on it as well and I had to take off some of them, the firewall to actually get into it.
- Interviewer Did you, you had to actually take off a firewall and do you know how to do that yourself do you?
- Joshua Yeah. It's a Norton anti-virus thing I think, I have just got to take it off and put it back when I am done.
- Interviewer Oh right so you had to physically take Norton anti-virus off before you could go in.
- Joshua Yeah.
- Interviewer That's interesting. OK but you could do that, did you get anybody's advice on that or?
- Joshua No, I know how to do it really.
- Interviewer You know how to do it, OK, so once you did that you could get in?
- Joshua Yeah
- Interviewer Because you went in quite early didn't you, you were in there I think right from the start, yeah you got in on the 2 March didn't you, so yeah very quickly. OK Michael did you have any problems getting in?
- Michael Same as Joshua sometimes it was something to do with the firewall because I have Norton anti-virus as well, so I had to take it off.
- Interviewer You actually had to take it off yours as well, oh right.
- Michael Sometimes it wouldn't work, sometimes we couldn't figure out why, but then I found out.
- Interviewer So you took it off and then it did work OK for you?
- Michael Joshua told me how to do it.
- Interviewer Joshua told you how to do it, oh right so that is what you would do if you had a problem, you would ask one of your friends who is an expert. That is interesting because I have got Norton anti-virus on mine at home and it didn't stop me, I didn't have to take that off, interesting. OK I am not disbelieving you for one second, it is just interesting how these things work isn't it. OK so the next one is – where were you when you made your posts?
- Michael At home.
- Interviewer You were at home Michael, yeah, all of them?
- Michael Yeah.

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Interviewer	Yeah OK – Joshua?
Joshua	I was around my dad’s house doing it.
Interviewer	You go to your dad’s to do it, is that where you go to get access to the computer? Yeah, OK.
Joshua	Yeah.
Interviewer	And the next one then is how did you decide what reason to post in – so you put a post in where you started a new subject – how did you decide what to post on?
Michael	Well the first one I did I think it was about the Wall Street Crash and that was what we had just learned in history so I thought
Interviewer	Right so it was fresh in your mind.
Michael	From my memory so I thought I would post that.
Interviewer	OK, yeah and how about you Joshua.
Joshua	Yeah because he has taught us it in the lesson and he just told us to try and get some of that stuff on it, so I just put that on.
Interviewer	So that is what you did and then when you went in after that, because you have been in since both of you doing other things, how did you decide what to post on there?
Michael	Sometimes I did a reply instead of making my own post, I think I replied to Joshua I think.
Joshua	Yeah.
Interviewer	Yes.
Joshua	About the Jewish people.
Michael	Yeah.
Interviewer	And again why did you decide who you were going to reply to?
Michael	I am not sure really I just saw Joshua and I thought that was quite a good subject so I replied to that one.
Interviewer	Right did you reply to anybody else in there?
Michael	I think so, I can’t remember.
Interviewer	No, OK and Joshua?
Joshua	I was just thinking about the war and about Hitler so I just thought about some of the stuff and put it on really.
Interviewer	Yeah, OK as you thought about it. And how about deciding which ones to reply to?

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- Joshua I don't know I was just clicking on them and saw which one – pretty random really.
- Interviewer Yes, so did you read all of them, did you read all of the posts in your conference?
- Michael Yeah I think so.
- Joshua Yeah
- Interviewer Yeah you think so. OK. And you know when you actually started to put your post in, how did you go about that, did you hand write them first or did you just type them straight away?
- Joshua Just typed them in.
- Interviewer Yeah you typed them straight in Joshua and Michael you did the same and then when you typed them in did you then send them up to the message board or did you check them first?
- Michael Yeah.
- Joshua I checked them for spellings.
- Interviewer You checked the spellings both of you checked the spellings.
- Joshua Made it look more colourful sometimes.
- Interviewer Oh right so you changed
- Joshua The layout a bit better.
- Interviewer You changed the colour and you changed the font as well, so why did you do that?
- Joshua To make it look better really.
- Interviewer OK.
- Joshua So people can see it a bit better.
- Interviewer Right so you thought it would be better – I understand yeah and that is the same for you Michael is it?
- Michael Yeah.
- Interviewer Did you change the font and the colour at all?
- Michael No I just kept it how it was; I didn't know how to change it.
- Interviewer You didn't know how to change it, no OK. And then when you had sent the post in and you went back, did you then go back and look at it when it was there up in the discussion?
- Michael Yeah I got a few replies.
- Interviewer Right and did you do anything to your post at that point, did you look at

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- it and think I will change something in here or edit something?
- Michael No.
- Interviewer You kept yours just the same Michael. Joshua?
- Joshua I did yesterday when I put a couple in I saw some mistakes so I edited it and saved it again.
- Interviewer Right so after you had posted them, you went back – read it, saw some mistakes and corrected them and were they spelling mistakes or were they history mistakes?
- Joshua I am not sure, I think some of the sentences just didn't add up really, they weren't set out correct, so they didn't look right, they didn't make sense, so I just changed it.
- Interviewer I see, so you changed the sentence structure. OK. Now we mentioned, Michael just mentioned replies, so were there any replies to any of your posts that you particularly remember and why?
- Michael Well I think the ones that I made everyone just agreed with me really with what I wrote.
- Interviewer Yes, nobody disagreed with you.
- Michael No they said I agree with you, they were all like that.
- Interviewer And what did you think about that?
- Michael Yeah I thought it was cool.
- Interviewer It was cool. OK and Joshua, any replies to your posts that you particularly remember?
- Joshua I remember Michael's because I think he replied to one of mine – did two of them about the Jewish people and I just remember them, he wrote about his mum and not getting into a school, the art school he wanted so I just remembered it.
- Interviewer Oh right yes, so about Hitler's early life.
- Joshua Yeah.
- Interviewer OK, so that is all about your post. How well do you think your discussion group worked, discussion group 1?
- Michael I think well – was it just us three in our group?
- Interviewer There were in discussion group 1 there were in total 11 people in discussion group 1.
- Joshua I didn't see

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Michael	Only me and Joshua
Interviewer	Only you and Joshua from this school got in yeah, there is one, two, three, four, five, - five from Walton High got in.
Michael	Yeah.
Joshua	I didn't see many from the other school, but I saw a lot but the same name kind of thing, I didn't see all of them, all the people posting.
Interviewer	No. Well none of those – I don't think of any of those, no none of those got in until the 24 th did they, so there was just you two for a while.
Joshua	Yeah.
Interviewer	OK so saying that how well do you think it worked?
Michael	Yeah I think it worked pretty good.
Interviewer	Pretty good for you two?
Michael and Joshua	Yeah.
Interviewer	And what contribution did you make to that, pretty big I guess, just the two of you?
Michael and Joshua	Yeah.
Joshua	We just kept talking about Hitler and Nazis and
Interviewer	Yes and did you say more or less than the normal classroom discussion?
Joshua	About the same really.
Michael	Yeah.
Interviewer	So you make contributions in class discussions?
Michael	For me it was probably – I probably wrote more than I contribute probably.
Interviewer	OK and why do you think that is?
Michael	I am not sure really.
Joshua	It might be because you can't exactly see them face to face.
Michael	Yeah that's true.
Interviewer	Yes.
Joshua	And its easier not to make mistakes on a computer because you can like correct it and sometimes it does it for you, so you don't say some things that are like wrong, sometimes.
Interviewer	OK yeah. Did you feel that then, did you think that happened?

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- Joshua Yes
- Michael Yeah.
- Interviewer OK so any other reason why you said more in this discussion than you do in the classroom?
- Michael No cause really, cause I had access to a computer I could see - check on the internet see if what I was writing was correct, so I could make sure that what I was writing was
- Interviewer Oh right so what sort of things did you do to check on, so you are talking about whether the history was right?
- Michael Yeah I did a bit of research as well and what I found out
- Interviewer OK so where did you go for that research?
- Michael Wikipedia I think.
- Interviewer OK Wikipedia. Good. How did it compare to MSN?
- Michael Well usually on MSN you are just chatting to friends you are not really talking about history but – there is not much difference really.
- Joshua It was fun. I don't really go on MSN because I have got it but my sister goes on it more than me so I don't really go on it.
- Interviewer OK. And Zahira do you go on MSN?
- Zahira Yeah quite often.
- Interviewer But you won't be able to compare. Do you think that the conference has helped you to get better at history?
- Michael Yeah.
- Joshua Yeah because you know what other people's opinions are really and they might say something that we don't know yet, so we know and if it comes up in class and they say, what do you know about this and this, we can say, so we actually know.
- Interviewer OK did you learn anything new from the other people in your discussion?
- Joshua For a while because they had something about von Papen and something on Schneider and we didn't know about that until last lesson really.
- Interviewer OK. So you sort of, they were a bit ahead of you in terms of how they were looking at it? Yeah and was that – did you think that was good?
- Joshua Yeah because we know more really.

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- Interviewer OK. So you know more, you think it helped you like that, you know more, did it help you get better at history in any other way?
- Michael In like arguments as well, just getting better at sort of arguing, yeah because we don't really do that in history much do we so I thought that was good.
- Interviewer You don't do argument much in history?
- Michael Not really.
- Joshua Not between ourselves really.
- Michael That was what was good about it I think.
- Interviewer OK, so lets talk about that, so how did it improve – so how did you think this computer conference improved your arguing skills?
- Michael I think it made me see both sides of the argument instead of always just looking at one side; I started to look at the other side as well, their opinions.
- Interviewer And why were you able to do that?
- Michael I just felt that I could just write both sides of it instead of just sticking to one side.
- Interviewer OK, yeah. How about you then Joshua?
- Joshua Because you could see everyone's opinions really, so you know like to counter it, what they say really.
- Interviewer So did you counter other people's opinions?
- Joshua Yeah some of the things yeah.
- Interviewer So can you think of an example that you did?
- Joshua I can't really remember now.
- Interviewer No. Its those couple of pages which might help. SHOWS PRINT OUT OF CONFERENCE
- Joshua I don't know because I think I put a load on yesterday and I don't think you have got it.
- Interviewer Yes I haven't got yesterday's on no.
- Joshua I don't think I did it until ...
- Interviewer Until yesterday. Yeah because quite a lot happened in the last few days didn't it, quite a lot of postings have happened and now people can go in every conference and Joshua has been in every one, and told everybody had to change their name – yeah. Whilst I am talking about changing

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- names, you changed your name Joshua?
- Joshua Yeah.
- Interviewer Why did you do that?
- Joshua I don't know because everybody else did, I might as well join in really.
- Interviewer OK and was there anything significant about what you changed your name to?
- Joshua Well I changed it to Chelsea are the best and I support Chelsea so.
- Interviewer Right OK. And Michael did you change your name?
- Michael No, I just kept mine the same.
- Interviewer And why?
- Michael Because then people could see a bit more clearer all the posts that I had wrote, so they knew it was me.
- Interviewer So they knew it was you, so you wanted them to be clear it was you?
- Michael Yeah.
- Interviewer Mind you they knew quite clearly it was Joshua as well I suppose because you actually put Joshua Taylor Chelsea are the best or something.
- Joshua Yeah
- Interviewer As your new name. OK thanks for that. Lets just go on to the main question that you were trying to answer - the most important reason why the Nazis came to power in 1933 was that they had Hitler as a leader, do you agree? That was the question. What did you think was the answer to that question at the beginning of the conference – Zahira what did you think was the answer at the beginning?
- Zahira I think that well I think that it is true because Hitler was like a loud speaker and because he was a good leader, the party started listening to him but they didn't listen to him at first, but - because he was good at debating and that people eventually listened to him and they started supporting him.
- Interviewer OK and that is what you thought at the start. Yeah, ok. Joshua what did you think at the start?
- Joshua I agree because if they just had somebody else who might not have got as far because Hitler was really a good leader and he has got loads of skills and speeches and he knew how to say everything perfect and get

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	people to vote for him and stuff really.
Interviewer	OK yeah. And Michael?
Michael	Yeah the same.
Interviewer	The same, that is what you thought at the start. Now what did you think at the end now, is it any different to what you thought at the start, have you changed your thinking at all Zahira?
Zahira	Not really no.
Interviewer	Not really no – Joshua?
Joshua	I think it is still the same.
Interviewer	You think it is still the same. Michael?
Michael	Slightly different because all the effects of like the Treaty of Versailles and Wall Street Crash, it just shows that some things Hitler couldn't actually control.
Interviewer	OK.
Michael	So.
Joshua	He used them to his advantage really.
Michael	Yeah.
Joshua	Like fear of communism and he used that, he would say get rid of all the communists for the German people so.
Michael	So I think it changed a little bit what I thought.
Interviewer	Right and was that because what was happening in the conference, or because of what was happening in lessons?
Michael	Probably the conference.
Interviewer	OK. Right thank you very much.